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ABSTRACT

To determine the designs, procedures, and findings of studies related to an investigation of the developmental aspects of the writing processes of children, a literature search was made of documents indexed in "Current Index to Journals in Education" (CIJE) and "Resources in Education" (RIE). A search was also made of the literature in Psychological Abstracts, Comprehensive Dissertation Index, and the Language and Language Behaviors Index. From the analysis it would seem that most of the literature regarding the writing processes of young children has been concerned specifically with developmental aspects. Research conclusions suggest that teachers should question children to help them expand their ideas about writing and options for writing those ideas. Teachers should also encourage children to set standards for their writing and encourage other children to provide feedback. In particular, the research findings of Donald Graves suggest that children should be encouraged by their teachers to focus on the message rather than on its form and to realize that words are only temporary. His findings also show that informal classroom settings promote writing and that unassigned writing seems to stimulate boys' writing and results in longer compositions. (HOD)

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THE DEVELOPMENTAL ASPECTS OF THE WRITING PROCESSES OF YOUNG CHILDREN A REVIEW OF RELATED RESEARCH

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THE DEVELOPMENTAL ASPECTS OF THE WRITING PROCESSES OF YOUNG CHILDREN: A REVIEW OF RELATED RESEARCH

Nearly all of the research on writing has looked at writing products rather than at the process by which they came into being. While there have been attempts to infer from written products how the mind works during the writing process (Kinneavy, 1971; Odell, 1977) and to develop theories about writing (Page, 1974; Ney, 1974; King & Rentel, 1980; Shanklin, 1981), research has generally avoided studies that directly investigate the actual process of writing.

The purpose of this research review is to discuss the designs, procedures, and findings of studies related to an investigation of the developmental aspects of the writing processes of children. More specifically, the question formulated to guide this review of literature is as follows:

> According to prior research, what developmental stages of the writing processes of young children have been identified?

Primarily, three sources were consulted during the development of these review questions: applicable theory, prior reviews, and primary research concerning the topic of writing processes and writing development.

Search Procedures

Since the results of an integrative review of research

are necessarily related to the studies considered and eventually selected to be included in the review, the strategies regarding the search for appropriate studies are reported in this section.

Several search strategies were utilized to assure as thorough a review as possible. The reviewer consulted an information retrieval system, several indexes, numerous bibliographies, and previous reviews of literature.

Information Retrieval System

The information retrieval system used to locate research studies for possible inclusion in the review was that of Bibliographic Retrieval Services, Inc., which searches documents indexed in the Current Index to Journals in Education (CIJE) and Resources in Education (RIE). Two categories of descriptors were used to search the titles of the documents for possible inclusion in this review of literature. These categories were 1) writing processes and 2) writing research, and terms synonymous with these two descriptors. A third category was added to eliminate many of the unrelated documents. This category of descriptors excluded documents related to curriculum development, vocational training and second language education.

Indexes

Indexes of sources not included in the retrieval system were also consulted during the search for related research

studies. These indexes include Psychological Abstracts, Comprehensive Dissertation Index, and the index Language and Language Behaviors.

Bibliographies

Two bibliographies, of the several searched, proved to be quite helpful in locating existing studies concerning the writing processes of children. Though most of the studies included in the bibliographies were also included in the more comprehensive bibliographic listings generated by the information retrieval system, this inclusion acted as a validation check regarding the key word descriptors used during the automated search. Also, bibliographic listings included unpublished documents, documents not included in CIJE or RIE, and entire texts not searched by the information retrieval system.

Previous Reviews

Three previous reviews of literature (Graves, 1973; Atwell, 1981; Petty, 1978) concerning the writing process identified many related research studies included for summary or for additional review here.

Characteristics of the Studies

The characteristics of the research studies reported in the literature are summarized in this section. In some cases the reviewer has included research reports located through

the search procedures which were based upon preliminary findings. Inclusion of these studies is important to provide the reader with a notion of current, ongoing research directions and hypotheses. However, the findings from these reports must be considered tentative. In each case, preliminary reports will be indicated as such in the review.

Developmental Stages in the Writing Process

Most of the literature regarding the writing process of young children has been concerned specifically with developmental aspects (see Table 1).

Giacobbe study. A most notable study conducted by Mary Ellen Giacobbe (Graves & Giacobbe, 1982) examined the development of first grade writers during the last six month period of the school year. Ten of Giacobbe's twenty-three students, distributed among low, middle, and high performance levels, were interviewed concerning their choices of topic, plans for writing, reflections about their writing, and plans for the completed product. Six standard questions were developed, although Giacobbe further prompted students when necessary. Data from two of the children, representing the low and high performance group, were reported in terms of "the three most important sections to monitor child change through questions: information, process, and standard."

The information the children used developed from a non-specific pre-conception of what will be contained in their writing to a more elaborate, concrete pre-conception of

Table 1 Observed developmental writing processes of young children reported in various research studies.

Study	Rehearsal	Revision	Motor/ Control	Oral Language	Focus	Topic
Ames & Ilg (1951) N=5-45			X			
Graves (1979a) N=20	X			X		
Graves (1979b) N=16	X	X		X		X
Graves (1979c)		X				
Graves (1982)					X	
Graves & Calkins (1979) N=1	X	X				
Graves & Calkins (1980) N=2						
Graves & Giacobbe (1982) N=10		X			X	X
Hildreth (1936) N=170			X	X		

what will be contained in their writing. Also, children's sense of options about their information was viewed as developmental. Children moved from being limited to a single notion of how a piece of information may be written to realizing that they are in control of a variety of options for the development of a piece of writing.

The process of writing was monitored by asking the subjects about their composing before writing and after writing throughout the six month period. Developmentally, children become more clear about what processes they use when contemplating what will be written and when contemplating what will be done with their writing products. Children seem to progress from awareness of an external behavior they exhibit when contemplating what will be written (i.e., drawing) to awareness of the internal process that must be used (i.e., thinking) to awareness of an external counterpart of what they actually do to describe their writing process. Children also develop a sense of what can be done with their writing products: children advance from the notion that a piece of work is completed at one sitting to the more advanced hierarchical level of revising or adding material, to the still more advanced concept of deletion of information irrelevant to the main idea.

Following each interview, children were asked how they felt about each piece. Children were able to set "standards" for their papers in a developmental pattern: "feeling" that the paper is good, followed by introducing certain criteria

by which a product might be judged (i.e., having a lot of information, being enjoyed by other people).

The Giacobbe study warrants a few comments on certain procedural aspects. The study represents one of a few excellent naturalistic inquiries conducted by in-service teachers. Observation techniques were kept unobtrusive and resulted in valid data from which the researchers could draw conclusions. A second feature of this study to be commended was the use of a treatment/observation period of six months. Too often educational research is based upon treatments of unrealistically brief periods.

The report of the study, unfortunately, omitted a few crucial elements. The report does not state 1) the criteria by which students were judged to be performing at low, middle, or high performance levels in writing, 2) how students in each of these levels progressed in writing in respect to children in other levels, 3) how students not chosen to participate in the study, and presumably not being interviewed, progressed in respect to those in the study. The answers to these questions, though not discounting the findings of the study, could easily have given the reader additional, and often necessary, information from the same data base.

Graves: The writing process laboratory. Preliminary findings from a two year research study funded by the National Institute of Education (NIE) have resulted in several reports by Donald Graves concerning developmental

aspects of the writing process (Graves & Calkins, 1979; Graves, 1979a; Graves, 1979b; Graves, 1979c; Graves & Calkins, 1980; Graves, 1982). These findings have more recently been reported in the final report of the research project (Graves, 1981a).

Graves placed primary emphasis upon gathering information when children were actually engaged in the act of writing. Data were gathered from sixteen children (eight in grade one, eight in grade three) in a longitudinal two year study by the use of direct observations and video recordings.

Findings concerning the processes of writing have been summarized from the many preliminary research reports and the NIE final report in Table 2.

Graves' research represents the largest single endeavor into the writing process of young children. The methodology used to outline this study was outstanding. Graves utilized a naturalistic paradigm to observe the writing process of sixteen children. This research paradigm is a commendable choice for the research questions concerning writing processes to be answered in this study since it allows for direct observation of a few case studies. The design also entails a longitudinal study of intact groups of children progressing through grades one and two and children progressing through grades three and four. Although the ideal longitudinal study would focus on the same subjects from grades one through four, developmental studies of this nature are rarely possible in education; Graves' research

Table 2 The developmental changes in within various aspects of the writing of process of young children (grades one through four).

Writing Process	Developmental Changes within Processes
Revision	1. Revision occurs at different levels a. During the prewriting stage b. On paper to revise content c. Orally d. Unconsciously to make sentences smoother, etc. e. Deliberately, as child circles awkward phrases, etc. f. Internally, without overt accompanying language (Graves & Calkins, 1979)
	2. A child's revision patterns are shaped by a variety of circumstannces: a. Word stability (invented, transition, stable inventions, sight words) b. Newness of the revision procedure c. Audience response d. Purpose of the writing (Graves, 1979c)
	3. Capacity for revision is demonstrated by a number of behaviors: a. Revision in other media forms (drawing, painting, etc.) b. Ability to write a series of leads about the same subject c. Demonstration of crossing out, arrows, etc., that show that words are temporary (Graves, 1979c)
	4. Revision is enhanced by a. Writing about personal experiences b. Choosing their own topics c. Reading the products to peers (Graves, 1976)
	5. Fast writers revise larger units than do slow writers

(Graves, 1976)

Drawing	1. Drawing prior to writing is a rehearsal for text (Graves, 1979a) 2. The use of drawing occurs at three levels in first grade children: a. Prior to writing as a rehearsal b. After writing c. Drawing not necessary
Pre-ideation	Children advance from an inability to plan ahead to complete ideation at the story level. (Graves & Calkins, 1980)
Focus	Children advance through the following levels of consciousness of problem solving: a. Spelling b. Motor/aesthetic c. Conventions d. Topic information e. Revision (Graves, 1982)
Resources	Children advance from complete self-reliance to reliance on outside resources for help with topic information and conventions.
Topic choice	First grade writers develop a temporary barrier when selecting a topic area. Stages include a. No delay (Child draws then writes) b. Short delay (2 minutes, child writes then draws) c. Long delay (5-10 minutes, child aware of audience) d. Little delay (aware of variety of choices) (Graves, 1979c)

design was a desirable compromise. Hopefully, the funding and exposure received by this outstanding study will encourage other writing researchers to consider designs of this nature when examining the writing process.

Two motor development studies. Two studies of writing behavior, though peripherally related, are included here because of their landmark expedition into the area of motor control in children in the act of writing and because of certain commendable features in their designs.

Louise Ames and Francis Ilg (1951) analyzed 50 preschool children of above average to superior intelligence to determine "the normal course of development" in writing behavior. Children were observed in the home, nursery school, and school at six month intervals from the ages of 36 weeks to approximately 10 years. Findings consist of a detailed account of the changes which typically occur in the printing and "writing" (cursive writing) of letters, words and numbers (see Table 3). This longitudinal study of such a large number of subjects in various settings offers well-grounded insight into the developmental aspects of children's motor development while writing.

A second study of motor control during the writing process was conducted by Gertrude Hildreth (1936). Hildreth studied 170 above average children aged three to six who were entering or enrolled in a private New York school. Developmental stages were identified in terms of motor control, handedness, comprehension of directions and

Table 3 The development of the writing behaviors and motor control of children ages 36 weeks to 10 years. (Ames & Ilg, 1951)

Age in Years	Behaviors Exhibited by Child
3.0	Some imitation of actual writing
3.5	Capital letters may be made very large and irregularly
4.0	First letters of familiar words may be printed spontaneously
5.0	Printing may be in horizontal or vertical alignment
5.5	Short words may be spontaneously printed as well as name and numbers
6.0	Prints capitals
7.0	Forms words or sentences
8.0	Writing single words (majority)
9.0	No longer prints, writing neater

compliance with requests. As well as delineating the writing development of the children based on samples, Hildreth also reported factors which shed light on the development of interest in the writing process.

> "[Children] become interested in the writing process and make inquiries about it. They reach a point in their development where they very much want to imitate the adults' writing activities They show insight and autocriticism of their own immature efforts to strive to improve. Improvement that results from this inner urge which is largely the result of maturation in a literate environment is fast or slow depending upon the child's learning

> ability, the interest he takes in the process, the stage of maturation he has reached when this interest is shown and the help he gets in recognizing and correcting his errors" (Hildreth, 1936, p. 301).

Hildreth's study, an important contribution at the time, is one of the first studies to suggest that research in writing and the teaching of writing should begin to look at issues other than "penmanship". The study examines a large population of children, by use of intact groups, between the ages of 3-0 and 6-11. Apparently some reporting errors were overlooked, since the results of the study indicated data drawn from children up through nine years of age. The sample was also drawn from a somewhat unique group of above average private school children. Threats to the generalizability of the findings could have been eliminated through the use of a more representative sample.

Interpreting Results

As with primary research, it is impossible to do a major review carefully without developing some ideas of implications for researchers, reviewers, and practicing teachers (Jackson, 1980). This section of the review will present conclusions regarding implications for future primary research studies, implications for future reviews on writing process research, as well as implications for classroom teaching practices.

Implications for Teaching

The findings of these studies suggest some teaching practices. However, the suggestions reported here must be considered tentative. The studies reviewed require replication and verification before advocacy of a particular methodology is warranted.

Developmental Aspects. Giacobbe's findings concerning the development of children's expanding sense of options about their writing and pre-conceptions of what will be contained in their writing suggest that teachers should probe children to help them expand their ideas about writing and options for writing those ideas. Teachers should also encourage children to set standards for their writing, and encourage other children to provide feedback.

Graves' findings that revision patterns are shaped by a variety of circumstances suggest that teachers should provide real purposes for writing, opportunities for audience response, freedom of choice in topics, and encouragement for writing about real experiences. Children should be encouraged by their teachers to focus on the message rather than its form, to realize that words are only temporary.

Environmental/Internal Variables. Graves' findings about writing in informal classroom settings certainly has classroom implications. Also, findings that unassigned writing seems to stimulate boys' writing and results in longer compositions are important for classroom practices.

Research Implications

Suggestions for future reviews. While in the process of doing this review of literature, additional questions arose which need to be answered through another substantial review of literature in the area of the writing process. These questions may be a valuable contribution to other investigators about to do a review of literature.

As reviewers begin the task of doing a review, they need to consider several of the same questions that this review considered, with older children as the focus of the study.

According to prior research, how do the writing processes children use affect the writing products of the children?

According to prior research, how are the reading processes of children related to the writing processes of children?

According to prior research, do older beginning writers develop similarly to younger beginning writers?

According to prior research, do the invented spellings produced by children in the process of writing relate to the writing processes as a whole, to the reading process, or to teachers' perceptions of children as writers?

According to prior research, what influences early writing in preschool children? What processes do these children use?

Primary research. As researchers study the writing

process, they need to try to discover the behavioral differences that are exhibited at different maturity levels. Can classroom environments or instruction affect these behaviors? If so, to what extent?

How do developmentally high writers differ from developmentally low writers? Do developmentally low writers follow the same patterns?

Do good and poor readers have the same writing process?

How do teacher-pupil conferences enhance the writing process? What teacher behaviors foster assigned and unassigned writing? How do other classroom environmental variables affect the writing process?

Does intelligence affect the writing process? If so, to what extent?

How does the home environment influence the writing process? Can parents "model" writing for their children?

Do the findings concerning the developmental patterns hold up in other environments? Can the findings be generalized to other regions, races, and socio-economic groups?

Can case study procedures be improved upon? Does a video camera yield more effective results? Do children hesitate to write when a camera and tape recorder are present?

These suggestions for future research are only beginnings. Possibilities are nearly limitless. The major point to be made is that resarch needs to begin asking new

questions. Questions must be asked about the writing process itself, not just about the product. The product is just that--a product. It tells us nothing of the process by which it came into being or what went on in the child's mind as it was written. The process, however, is the key to what goes on inside the child.

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